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A Concession Overdue

It is likely that veterinarians in private practice will have noted, with satisfaction, the provision in the Budget to allow professional and other "self employed" men and women to make some provision for their retirement through special insurance policies carrying tax concessions. This gesture on the part of the Treasury is, to put it mildly, overdue, and still seems to leave anomalies which should, in equity, be resolved.

There is no provision, for example, to enable those of mature age to pay larger premiums proportionate to the fewer years they may expect to be actively employed; neither will the retirement pensions purchased—out of savings—be free of income tax when they come to be drawn.

It may be suggested that veterinary surgeons in private practice are more vulnerable, economically speaking, than are members of most other professions. In small-animal practice the growth of "free" clinics—to say nothing of their relentless advertising—causes grave concern; while large-animal practice, associated as it is with the hazards of agriculture, calls often for considerable indulgence in the matter of credit to farmer clients. Furthermore, the wide variety of conditions encountered in practice in different parts of the country militates against standardisation of fees—perhaps to the detriment of the practitioner.

Certain other professions, that of architecture for example, are able to standardise fees over a wide field of work, with the result that fees may be adjusted by a central body so as to ameliorate rises in the cost of living. Such adjustments would seem to be easier for an entire profession to make than for individual members of it. Veterinary surgeons do not enjoy this advantage.

In a televised interview with the Chancellor a journalist, speaking of the professional and middle classes, asked: "Are you always going to turn your back on us?" The reply was to the effect that the new facilities to make personal pension arrangements were an earnest of good intention. It is to be hoped so.

At least one other anomaly of long standing which affects professional men and women is the means test applied to their children in the matter of university scholarships. It really is grotesque that a brilliant student is penalised—even to the extent of being unable to take up a university scholarship at all—because his father's gross (not net) income is of a certain sum.

In families where younger children are still at school, such discrimination—a complete inversion of the original means test—bears with particular injustice.

In an era when so much lip service is being paid to "social justice," scholarships should surely be awarded on merit alone, without consideration of parental means.

To speak freely about such matters is not to depreciate nor to undermine the altruism proper—and indeed fundamental—to the professional mode of life. But, as others have been forced to realise, altruism is not to be confused with self-immolation.

INDEX TO "THE RECORD"

Owing to the printing dispute, which began with a period of "working to rule" and culminated in a complete stoppage so far as the setting of type was concerned, the index has been delayed in publication. Every effort is being made now to expedite its production, though readers will realise that the journal itself has also considerable leeway to make up and is, in this sense, a competing demand. It is hoped, however, to complete the index reasonably soon, and in the meantime we must crave indulgence for the delay.

Some Notes on a Preliminary Trial of Segmental Epidural Anaesthesia of Cattle

BY
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Introduction

IN 1952 the Russian writers Magda, Shalduga and Voskoboinikov, in a paper entitled " Some notes on Rumenotomy " described a technique for inducing localised dorso-lumbar epidural anaesthesia in cattle. Using this method, and by making only one injection of 10 c.c. of a 4 per cent. procaine solution into the first lumbar epidural space, the whole left flank was anaesthetised, and these workers recorded 53 successful rumenotomies for the removal of reticular foreign bodies.

British veterinarians have long been familiar with " anterior " epidural anaesthesia in which, following the injection of graded quantities of anaesthetic solution into the first coccygeal epidural space, the sacral and lumber spinal nerves could be paralysed in ascending series (Brook, 1935). In this way it has been possible to perform laparotomies through the flank or lower abdomen, to operate on the udder and penis, and to carry out surgery of the hind limbs and feet. Using this form of anaesthesia in cattle at the Royal Veterinary College, three caesarean operations through a paramedian incision have been successfully performed. The method gave perfect anaesthesia of the posterior abdomen and absolute relaxation of the muscles of the abdomen and posterior limbs. Disadvantages of the technique were:—

(a) that the patient had to be put down and (the front parts of the body) forcibly restrained;

(b) that a variable time of up to 12 hours elapsed before the animal regained the ability to stand. During this time of posterior paralysis there was risk of injury to the hind limbs and udder;

(c) the method was costly because quantities of local anaesthetic up to 150 c.c. were necessary.

For flank laparotomies in cattle such as rumenotomy and caesarean section, paravertebral anaesthesia is extensively used (Farquharson, 1940; Formston, 1945). The considerable advantage of this practice over anterior epidural anaesthesia is that the patient remains standing. The technique of this method of perineural infiltration, however, is not easy in that the anaesthetic solution must be precisely placed over each of six nerve components in order to desensitise one side of the abdominal wall.

In introducing a method of localised or segmental dorso-lumbar epidural anaesthesia for bovine abdominal surgery, Magda *et al.* appear to have retained the advantages and disposed of some of the disadvantages of both anterior epidural and paravertebral anaesthesia. With a *single* injection of a *small* quantity of anaesthetic solution, major surgery may be performed on the standing patient with a minimum of restraint.

The Method in Use

In May of last year the present writer had an opportunity to use the method for the caesarean operation on a Guernsey cow. The purpose of the operation was to obtain a live calf from a cow which was eight months pregnant and which was affected with serious pulmonary complications following penetration of its thorax by a foreign body from the reticulum.

The technique of anaesthesia, after Magda *et al.*, was as follows:—

With the patient standing and restrained by the head, a 12 cm. spinal needle, external diameter 0.2 cm., was inserted at a point just to the right of the lumbar dorsal spinous processes and on a line 1.5 cm. behind the anterior edge of the second lumbar transverse process. The needle was directed downwards and inwards at an angle of 10 to 13° with the vertical, and for a distance of 7.5 cm. (Fig. 1). At this level there was a definite lack of resistance to downward progress of the needle and, on attaching a syringe and attempting an injection, the anaesthetic solution flowed in almost automatically. Ten c.c. of 3 per cent. solution of W-diethylamine-2.6-dimethyl-acetanilide* were injected and the needle left *in situ*. Five minutes after injection there was still slight skin sensation, but after 15 minutes the whole left flank was anaesthetised.

A vertical left flank laparo-hysterotomy was then performed with the cow standing and unrestrained;

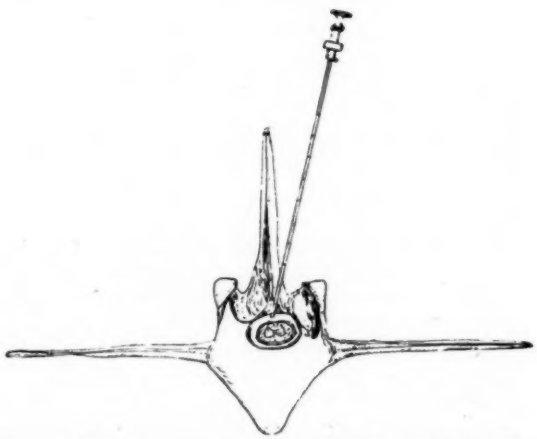

FIG. 1.—Posterior aspect of first lumbar vertebra with spinal needle in position.

* Xylotox.

a live calf was delivered. The foetal membranes were not removed and the uterine and flank incisions were repaired by conventional methods. The operation was completed 35 minutes after the injection of the anaesthetic.

One hour after induction the area of anaesthesia was mapped and photographed. There was loss of sensation from a broad belt of skin bounded anteriorly by the 12th rib and posteriorly by the haunch bone and stifle (Fig. 2). The teats and the whole of the udder except that part behind the posterior teats (supplied by the perineal nerve) were also anaesthetised. It was therefore deduced that the spinal

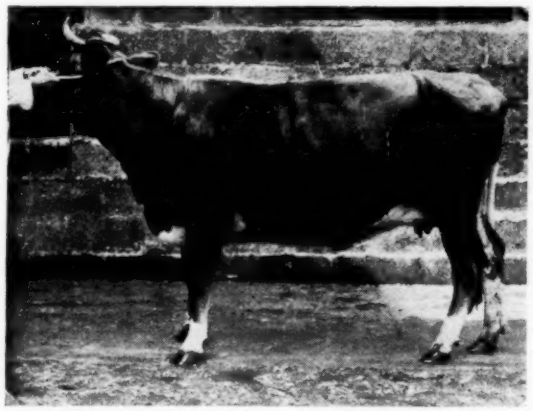

FIG. 2.—Flank caesarean section. Position of needle and area of lateral abdomen anaesthetised.

nerves affected were, in all probability, the 12th and 13th thoracic and first three or four lumbar (St. Clair, 1942).

Information from Further Trials

Some further trials with this method of anaesthesia have demonstrated the following points:—

1. The technique is simplified, and its possible dangers thereby lessened, if an initial skin wheal of local anaesthesia is produced, using a fine needle, and if a paramedian skin incision of 2 to 3 cm. is then made into this desensitised skin with the point of the proposed insertion of the spinal needle as its centre. Despite this precaution and the deposition of small quantities of anaesthetic along the track of the spinal needle, the penetration of the interarcual ligament is still, apparently, painful. With this modification, the spinal needle can be moved with relative ease and hence one is able to "feel" the difference in resistance which is offered by muscle and interarcual ligament respectively.

It should be noted that the dorsal intervertebral space through which the spinal needle passes to the epidural space is really an interosseous canal, and in a mature Jersey cow it measured 1 cm. deep by 0.8 cm. long by 0.5 cm. wide. This depth of the canal is of practical importance because, unless the spinal needle is properly inclined, its point will abut on the lateral wall of this canal, instead of passing on into the epidural space.

2. Immediately the needle point is felt to penetrate the interarcual ligament the stilette should be withdrawn and if air is heard to enter the needle it may be certain that the epidural space has been reached. Alternatively, in the absence of inspiration of air, and if no fluid emerges, a small trial injection should be made. If the needle is in the epidural space scarcely any pressure on the plunger is needed. If, on withdrawing the stilette, cerebro-spinal fluid flows from the needle, the latter should be quickly but gently withdrawn until the flow ceases, and then the injection made. Accidental puncture of the subarachnoid space in three cows has not caused any ill-effect. Although this is not a desirable procedure, such a happening does serve to indicate the exact position of the needle-point and the operator may be certain, after withdrawing the needle for a few millimetres, that its point is then in the epidural space.

3. In several cattle on which this anaesthetic technique has been used only unilateral anaesthesia—usually of the left but occasionally of the right side—has occurred. In such cases a pronounced bending of the spine was caused, the convexity of the curve lying towards the anaesthetised side (Fig. 3). These results indicate either that the needle point may come to rest to one side of the epidural space, or that there is in this space some physical barrier which prevents lateral flow of the anaesthetic solution. It is obvious that if the anaesthetic solution is deposited unilaterally a given volume will affect more spinal nerves on one side than if it is distributed to both sides of the space. That a unilateral effect was due simply to an insuf-

FIG. 3.—Unilateral, left-sided, anaesthesia.

ficient volume of anaesthetic was shown in one cow in which a unilateral effect only was caused by an injection of 7 c.c. but a further injection of 3 c.c.—without altering the needle—caused a complete belt of anaesthesia.

4. The doses of anaesthetic solution, so far employed for successful anaesthesia, have ranged from 6 c.c. in a yearling Friesian weighing approximately 5 cwt. to 10 c.c. in an adult Guernsey cow in good bodily condition. A small Guernsey cow which received 10 c.c. showed partial paralysis of the left anterior crural and obturator nerves. This resulted in a " dropping " of the stifle joint and an abduction of the limb with a tendency to fall onto the left side (Fig. 4). In one case—a young Friesian cow—a 5 per cent. procaine solution was used; an injection of

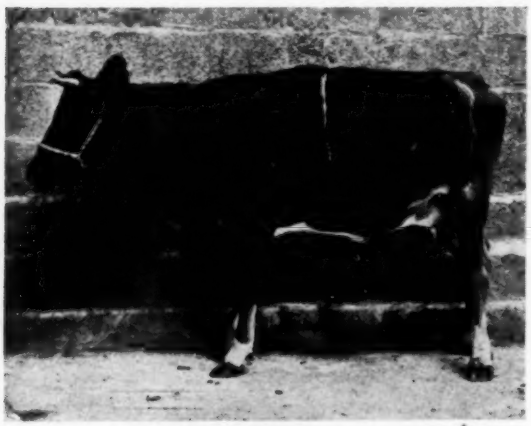

FIG. 4.—Area of anaesthesia with paralysis of obturator nerve.

10 c.c. caused an effect comparable to that produced by the same dose of the other anaesthetic, and the cow stood up and ate hay throughout a caesarean operation. On an average, anaesthesia was present about 10 minutes after injection and remained for approximately three hours.

5. Associated with this form of anaesthesia two interesting side effects on the sympathetic nervous system have been observed. The first was the passage of urine within a few minutes of making a successful injection. This was presumably due to paralysis of the sympathetic nerves to the sphincter of the bladder.

The second was the production of an increased warmth of the skin of the abdomen, udder and posterior limbs, as compared with that of the thorax. Along the line approximately of the 12th rib, the two areas of differing temperatures could be clearly appreciated. In a Jersey cow anaesthetised for a flank laparotomy, skin temperatures at the 10th rib and paralumbar fossa were respectively 94.8° F. and 98.8° F. Such an effect is probably caused by paralysis of the posterior dorsal and anterior lumbar contributions to the sympathetic system acting through the vasometer nerves of the skin papillae.

The possibility of shock, through paralysis of some of the components of the splanchnic nerves, received attention, but there was no clinical sign or symptom of this condition. This was probably accounted for by paralysis only of the last one or two dorsal spinal nerves, the main contributions to the splanchnic nerve coming from dorsal nerves anterior to these.

Conclusion

These preliminary trials of segmental epidural anaesthesia have confirmed its value for operations about the flank and udder of the standing patient. It must be emphasised, however, that the method involves an exact technique and those who wish to use it are advised first to study the anatomy of the region concerned, preferably by dissection of a cadaver.

Acknowledgments.—I wish to thank Mr. R. Mack, M.R.C.V.S., of the Commonwealth Bureau of Animal Health for arranging a translation of the work of Magda *et al.*, my colleague, Mr. E. F. Lewis, M.R.C.V.S., for help with photography, Mr. B. V. Jones, M.R.C.V.S., of Allen and Hanburys for the special epidural needles, and Messrs. W. L. King and P. Henfrey for technical assistance.

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THE BRITISH OLYMPIC EQUESTRIAN TEAM

As a result of the Badminton Horse Trials, the following horses and riders are now continuing collective training, at the Royal Mews, Windsor Castle, for possible selection for the Horse Trials section of the team.

Riders.—Lt.-Col. F. W. C. Weldon, Major A. L. Rook, Lt.-Commander J. S. K. Oram, Captain M. M. G. Naylor-Leyland, and Mr. A. E. Hill.

Horses and owners.—Countryman III (H. M. The Queen), Kilbarry (Lt.-Col. F. W. C. Weldon), Copperplate (Lt.-Commander J. S. K. Oram), High and Mighty (Mr. E. E. Marsh), Wild Venture (Mr. E. E. Marsh), and Just William (Miss G. Morrison).

All the horses and riders in training will be giving a display on May 11th at the Royal Windsor Horse Show.

Fusion of the Epiphyses of the Limb Bones of the Sheep

BY

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Introduction

AN enquiry into the ossification of the appendicular skeleton of the sheep was undertaken as the first step in a general programme of research into the skeletal development of the domestic animals. The work began as a series of preliminary observations, some of which (such as those on ossification patterns of foetuses) were very soon expanded into major investigations. Other aspects were allowed to develop later in the research programme, and yet others—for example, enquiries into species other than sheep—are still under investigation. This paper is devoted to the original study of the times and order of fusion of the centres of the limb bones of the sheep.

Previous workers on this problem were Lesbre (1897), Tschirwinsky (1889 and 1910) and Todd & Todd (1938); their results are summarised in Table I, Part I. Although Sanson (1872) was apparently the first to report on fusion of the epiphyses of the sheep he studied only the hind limb, and gave the order but not the times of fusion.

Materials and Methods

Through the courtesy of the late Professor Blakemore and Mr. McCrea I had access to the flock of Clun sheep kept at the Field Station of the Veterinary School. The method of husbandry was typical of a lowland grass flock.

It was decided to follow a group of sheep right through from lambs to adults, making observations approximately every two months. As the youngest of the flock at the time of beginning the observations was 10 months, the next crop of lambs was used to fill in this early period. All the sheep over 10 months were females ; below 10 months both males castrated at one month and females were used. Altogether 55 examinations were carried out spread over two and a half years, and 12 different sheep were involved.

The technique used throughout was radiography. This method has been generally employed in compiling data of human skeletal maturation, for example Davies & Parsons (1927), Paterson (1929) and Flecker (1932). It has many advantages over any other method—the main being that one result does not necessitate one death. A Newton-Victor K5 portable unit was used and standard film with standard intensifying screens in cassettes. Processing was normal.

Attempts were made to obtain at least two views of each region under inspection but this was not always successful.

In interpreting the radiographs attention is paid to the dark line of the (cartilaginous) diaphyseal disc. This gradually disappears while the white lines of the two fusing layers of the epiphysis and metaphysis respectively come to form a single white line. This is the epiphyseal scar and may disappear. The complete disappearance of the (dark) diaphyseal disc is taken as the criterion of fusion of the epiphyses.

TABLE I

SHOWING TIMES OF FUSION (TO NEAREST MONTH) OF THE EPIPHYSES ACCORDING TO VARIOUS WORKERS

	Part I			Part II
Investigators :	Lesbre	Tschirwinsky	Todd & Todd	Smith
Epiphyseal centre	(Time of fusion (to nearest month)			
Scapula, Tubercle	5	—	8	5
Humerus, Proximal ...	42	16–21	36	17
Tuberosity ...	—	—	—	28
Distal	3–4	3	8	4
Lateral epicondyle	—	—	—	4
Medial epicondyle	—	—	—	6
Radius, Proximal ...	3–4	3	6	4
Distal	42	16–21	33	21
Ulna, Proximal ...	36–42	—	—	21
Distal	42	—	33	26
Metacarpus ...	20–24	15–16	—	16
First phalanx ...	7–10	—	—	10
Second phalanx ...	5–7	—	—	8
Femur, Proximal ...	36–42	16	33	(17–18)
Greater trochanter	—	16	33	(17–19)
Lesser trochanter	—	10	—	13
Distal	36–42	16–21	33	(18–20)
Tibia, Proximal ...	42	16–21	33	25
Tubercle ...	—	—	—	30
Distal	15–20	10	12	15
Fibular tarsal ...	36	—	—	15
Metatarsus ...	20–24	15–16	—	15
First phalanx ...	7–10	—	—	9
Second phalanx ...	5–7	—	—	6

Observations

The bones of the limbs are dealt with in proximo-distal order, first of the fore limb. The data are summarised in Table I, Part II, which gives the times of fusion according to these observations to the nearest month. In cases where the results are indefinite an estimated time is given as a parenthesis.

Scapula

The only epiphysis associated with the scapula is the tubercle. This was separate at two months, but by four and a half months no break could be seen.

Humerus

The proximal part of the humerus has two centres associated with it ; these are for the proximal epiphysis (head) and for the tuberosity. The distal half has three centres, a distal epiphysis, a medial, and a lateral epicondyle.

Up to six and a quarter months the proximal epiphysis was completely separate, but from eight months to 14½ months some degree of fusion had occurred. At 17¼ months and after there was no separation.

The tuberosity had fused, except for a small area, by eight and three-quarter months. At 20¾ months there was still a small unfused region but by 27½ months this had disappeared.

The distal epiphysis was separate from the shaft at two months but fused at four and a quarter months. The lateral epicondyle was similar except that in one film there was a possibility of separation at four and a quarter months. The medial epicondyle was well separate from the shaft and from the distal epiphysis at two months. At four and a half months it was fused to the distal epiphysis but slightly separated from the shaft. Union to the shaft was definite at six and a quarter months.

Radius

Proximal and distal epiphyses are associated with the radius.

The proximal epiphysis was separate at two months but fused at four and a quarter months.

The distal epiphysis was definitely separate in films at 19½ months but fusion was complete at 20¾ months.

Ulna

The ulna has proximal and distal epiphyses. The proximal epiphysis was completely separate from the shaft at six and a quarter months but a small amount of fusion began immediately after this. Fusion was not definitely complete until 20¾ months. The distal epiphysis was fused at 26¼ months.

Metacarpals

The functional metacarpus of the sheep consists of the fused third and fourth bones. Each of these has an epiphysis only at the distal end. Although separate at 14½ months fusion was definite at 15¾ months.

First phalanx (fore limb)

This bone has only a proximal epiphysis. Although several films at about eight to nine months showed varying degrees of fusion it was not until 10 months that complete fusion was definite.

Second phalanx (fore limb)

There is only a proximal epiphysis for this bone : it appeared fused on most films at six and a half months but one series showed apparent separation. Fusion was definite at and after eight months.

Femur

The proximal half of the femur has three epiphyses associated with it. These are for the head (proximal epiphysis), the greater and the lesser trochanter. The distal half of the femur has only one epiphysis associated with it. With the equipment then at my disposal, satisfactory films of this bone were difficult to obtain. Sheep above about six months of age are relatively fat animals, and when in full fleece the amount of scattered X-rays are sufficient to make a film suitable for interpretation rather a rarity.

Where the observations are not sufficiently definite and estimated time is given in Table I, Part II as a parenthesis.

Although several earlier films gave the appearance of fusion of the femoral head, at 17¼ months one film showed a possible separation of a small region. Other films at this time showed fusion. The greater trochanter was separate in one limb of a sheep at 15¼ months and fused in the other. A slight separation showed in other films at 17¼ months. The lesser trochanter was definitely fused at 13¼ months though separate at 12¾ months.

The distal epiphysis was completely separate at 16½ months and only slightly separate over a small area at 17¼ months. The next clear record obtained, at 25 months, showed complete continuity of bone, with an epiphyseal scar present.

Tibia

The tibia has a proximal and distal epiphysis and a tubercle. The proximal epiphysis and the tubercle had begun to fuse with each other at about eight and three-quarter months but were separate from the shaft at 17¼ months. At 25 months the proximal epiphysis was firmly fused to the shaft. It was not until 29½ months that complete union of the tubercle and shaft had occurred.

The distal epiphysis fused definitely at 14½ months, although one or two earlier films appeared to be positive.

Fibular tarsal

There is an epiphysis in this bone which, though separate at 12¾ months, was definitely fused at 14½ months.

Metatarsals

As with the metacarpus the metatarsus is formed from two fused bones each of which has a distal epiphysis. These were separate from the shaft at 14½ months and united by 15¼ months.

First phalanx (hind limb)

This bone has only a proximal epiphysis which, although showing some signs of fusion at six and a quarter months, was not constantly fused until eight and three-quarter months.

Second phalanx (hind limb)

The proximal epiphysis of this bone was separate from the shaft at four and a half months but fused at six and a quarter months.

The Use of Nitrofurazone in the Treatment of Swine Paratyphoid in the Field

BY
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King's Lynn

IN the experience of the authors, the accepted method of treatment of swine paratyphoid with sulphonamides often leaves a high percentage of "carriers" which are slow to fatten after treatment. Salmonellosis in poultry has been treated with one of the nitrofurans with encouraging results, especially in the case of "carriers." It was therefore decided to use one of these compounds alone or with sulphonamides. Guthrie (1952) investigated the action of nitrofurazone in artificially infected pigs, and Lannek & Brag (1954) demonstrated its use in general control and prophylaxis.

Methods

The nitrofuran compound used was nitrofurazone (5-nitro-2 furaldehyde semi-carbazone) prescribed as an insoluble powder in the form of a premix of 11.2 per cent. nitrofurazone. This, when mixed at the rate of 1 oz. of the premix to 1 stone of dry pig meal, gave a concentration of 0.05 per cent. nitrofurazone.

In mild cases showing a poor growth rate but having normal appetite, the compound was fed to the affected and in-contact pigs for a period of seven days without the use of sulphonamides. In acute cases with profuse diarrhoea, and in chronic cases with skin lesions or obvious enteritis and where there was partial or complete anorexia, treatment was commenced by parenteral administration of sulphadimidine, and was followed by the feeding of nitrofurazone as soon as the appetite improved.

Results and Case Reports

Case 1

The subjects in this case consisted of 18 10- to 11-week-old cross-bred pigs, housed in a corrugated iron sty with access to an earth run. On examination on September 22nd, 1955, five pigs were found to be affected with diarrhoea and several others were thin and rough in the coat. The five pigs were treated with sulphadimidine and the whole pen was fed nitrofurazone for seven days. Two weeks later the owner reported a spectacular recovery.

Case 2

The subjects were a young Large White boar and gilt housed together, seen on September 10th, 1955. The owner complained of their poor appetite and condition over the last week or two. On examination both animals showed mild skin lesions and the gilt had slight diarrhoea. Nitrofurazone was fed in the meal. Five days later the skin lesions were indiscernible and the appetite had improved. On Septem-

Discussion

A comparison of these results with those of previous workers would seem to indicate that a very wide range of times of fusion is possible. However, very many factors are involved which might produce discrepancies, among them being the criterion of fusion, the breed and sex of the sheep, and the method of husbandry. I have used the radiographic evidence of presence or absence of cartilage. Tschirwinsky considered that fusion had occurred when eight and a half hours' boiling failed to separate the epiphyses. Todd & Todd relied on visual inspection of the skeleton, but had only five animals on which to base their results. As two of these (aged one month and 59 months) were outside the range at which fusion of epiphyses occurred, it leaves their work dependent on three skeletons. Lesbre gave no details of his methods.

The data collected in this series of observations approximate nearest to those of Tschirwinsky. They are, however, based on few animals and depend in some cases on estimations. Although it does not of itself show the effect of the factors outlined above, this study has served to point out difficulties in technique, etc., and has also given an approximate time schedule on which to base further work. This is now in progress and will be reported later.

Summary

The results are given of a preliminary survey of the times of fusion of the limb bones of the sheep. The technique used was radiography and the sheep were of the Clun breed kept under lowland grass flock conditions.

Acknowledgments.—It is a pleasure to record the help of Dr. E. Wynn Jones and also the farm staff of the Field Station. The routine technical work of radiography has been most ably performed by Mrs. Greenham and Miss Morgan and I am most grateful to them. I would also thank Professor Ottaway for the interest he is taking in this whole programme.

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ber 22nd the owner reported complete clinical recovery; both animals were eating well.

Case 3

The owner requested the examination of two " poor doers " of long-standing. They were two of a litter of Large White pigs born on March 29th, 1955. As seen in Fig. 1 their weight at six months of age was approximately a half, or less, than that of their litter mates. On examination on September 28th, 1955, they both showed several skin lesions. Sulphadimidine treatment was prescribed for three consecutive days and the feeding of nitrofurazone commenced on September 30th. Following treatment the skin lesions healed and the appetite improved. On November 19th these pigs were again seen to be showing slight skin lesions and some degree of roughness in the coats. Nitrofurazone was again prescribed and improvement again followed, both pigs being slaughtered at approximately 160 lb. weight two weeks later.

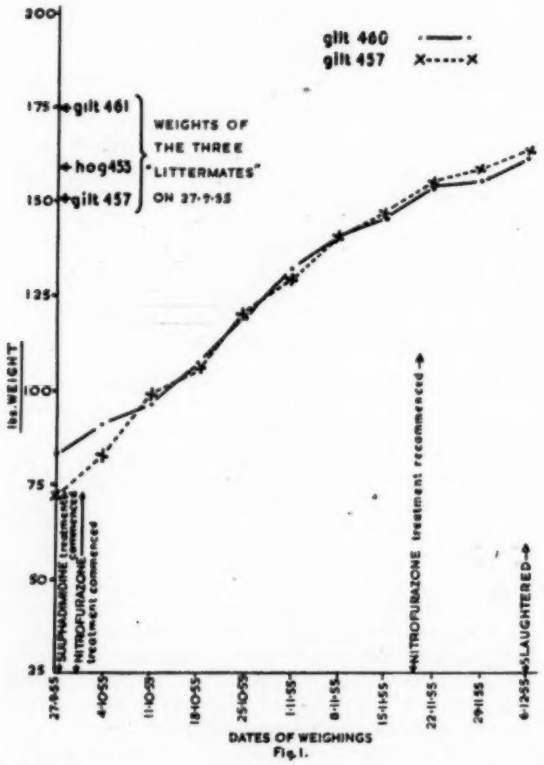

Fig. 1.

Case 4

This group consisted of a pen of four 15-week-old Essex-Large White cross-bred pigs born on July 6th, 1955, and housed indoors. On examination on October 21st, 1955, one of them (gilt No. 237) showed skin lesions and slight diarrhoea. Sulphadimidine treatment was carried out on October 21st, 22nd and 24th. On the 24th a hog (No. 233) in the pen was developing skin lesions and diarrhoea and sulphadimidine was administered on that and the following day. Nitrofurazone was commenced on October 24th for all four pigs. Improvement was satisfactory until November 17th when a slight relapse was observed in the original two pigs. The whole pen was treated with nitrofurazone for a further seven days. Improvement followed this treatment.

As may be seen from Fig. 2, hog No. 233 and gilt No. 237 did not gain weight as fast as was, perhaps, to be expected. This appeared to be due to the fact that since all four pigs in the pen were bulk fed, hog No. 232, which at no time showed symptoms, probably consumed more than its share of the daily ration. This is demonstrated by the improvement of weight gain after individual feeding (according to weight) was commenced on December 20th, 1955.

Gilt No. 238 showed no outward symptoms at any time, but its rate of weight-gain compared with that of gilt No. 232 suggests that it might have been subclinically infected. Similarly, at the time when skin lesions reappeared in pigs Nos. 233 and 237, and nitrofurazone treatment was recommenced, the rate of weight-gain in gilt No. 232 showed a decided increase.

Case 5

This consisted of 10 11- to 12-week-old Large White pigs comprising one litter. One pig was found dead on October 28th, 1955, after no apparent illness. Acute paratyphoid was diagnosed on *post-mortem* examination. On examining the rest of the litter the skins of several of them were rough in appearance and two had diarrhoea. Sulphadimidine was administered to all pigs for three days, and nitrofurazone was also prescribed. The litter was seen again on November 28th when all of them appeared normal, recovery having been uneventful.

Case 6

The subjects in this case were four 18-week-old Large White-Essex cross-bred pigs, housed indoors. On November 17th, 1955, they were seen to be unthrifty and showing skin lesions. Nitrofurazone treatment only was commenced, since their appetites were not appreciably affected. Improvement followed, though not as quickly as in some cases where sulphadimidine treatment had been used in conjunction with nitrofurazone.

Case 7

This group consisted of a pen of 10 12-week-old pigs which had been at grass since birth. The field upon which these pigs ranged had been used for sows and litters almost continually for four years. On examination on November 19th, 1955, unthriftiness and diarrhoea were observed. Sulphadimidine treatment was given on November 21st and 22nd and nitrofurazone treatment commenced. The litter was seen again five days later when marked improvement was apparent.

Case 8

This group consisted of a pen of 12 11-week-old Large White pigs on the same grass field as those in case 7, and when examined on November 21st they were seen to be unthrifty, and one or two had diarrhoea. Sulphadimidine was administered on

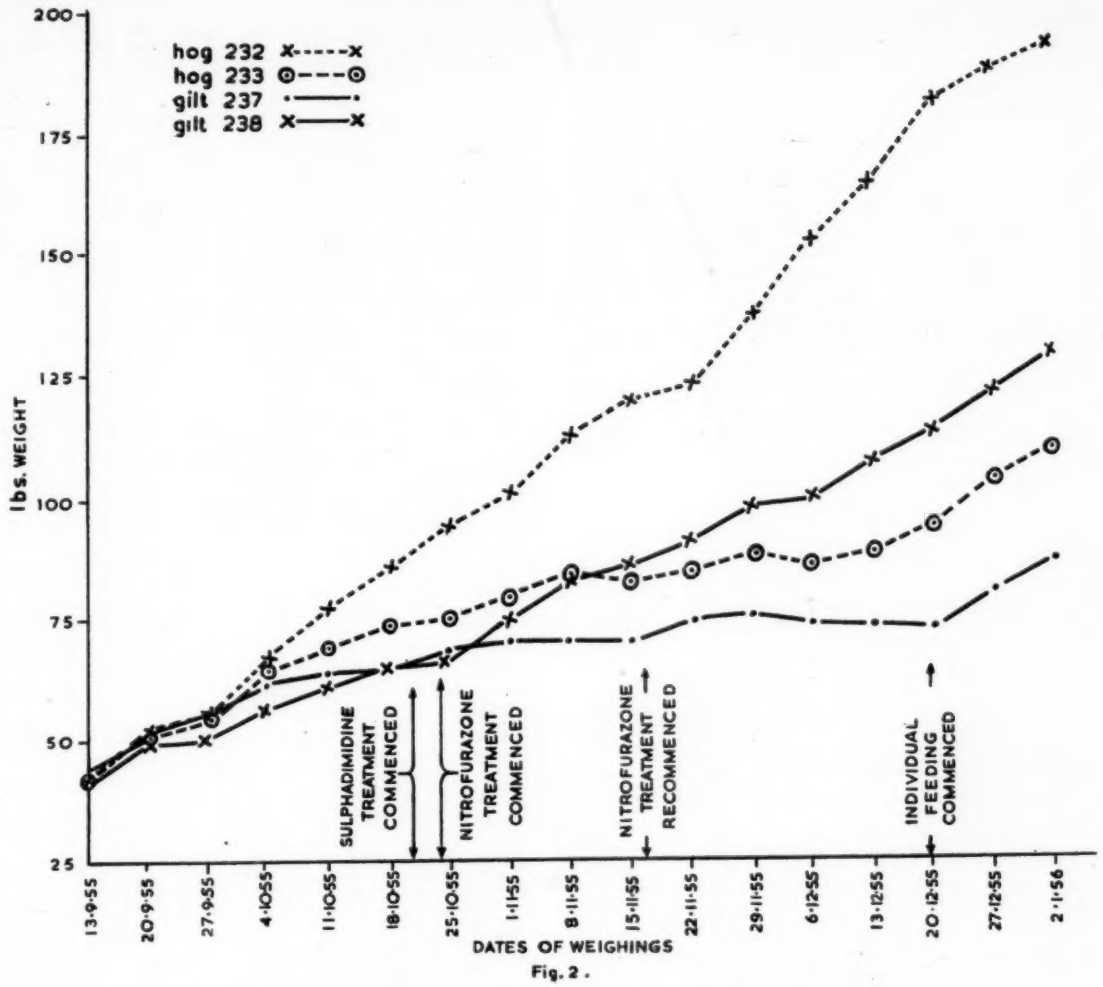

Fig. 2.

November 21st and 22nd and nitrofurazone was prescribed also. Complete recovery had taken place six days later.

Case 9

This group consisted of 30 16-week-old cross-bred pigs housed in a straw-yard and they were showing varying degrees of the chronic form of the disease. When examined on August 11th, 1955, nitrofurazone was prescribed for seven days and sulphadimidine was administered daily for three days. On August 19th great improvement was seen and the owner reported subsequent uneventful recovery.

Case 10

On November 5th, 1955, we were requested to examine two cross-bred 12-week-old pigs, recently purchased and housed in a cottage-type pig-sty. The pigs had diarrhoea and were unthrifty. Nitrofurazone treatment was prescribed and when seen again on November 9th there was marked improvement which was followed by complete recovery two weeks later.

Discussion

The foregoing cases represent 10 of some 30 or more outbreaks of paratyphoid treated by the authors with nitrofurazone. Williams Smith (1954b) refers to the bacteriocidal properties of furazolidone as opposed to the bacteriostatic properties of chloramphenicol and sulphamerazine in the treatment of *Salmonella pullorum* in poultry when administered in adequate dosage. For this reason, and our experience of the rate of recovery in cases of swine paratyphoid when nitrofurazone is used alone or in conjunction with sulphadimidine, we suspect that nitrofurazone has a similar bactericidal action on *Salmonella cholerae-suis*. The dosage rate used is that recommended by the manufacturing chemist and whilst this exceeds the concentration recommended for poultry it was thought unwise to exceed the suggested dose because of the known toxicity of the drug. It may be that the relapses in cases 3 and 4 were, in fact, due to inadequate dosage level or possibly due to conditions of hygiene resulting in re-infection from

(*Concluded at foot of col. 1 overleaf*)

Correction of Rectal Prolapse in the Bovine

BY

D. L. SHAW

Frome, Somerset

Introduction

This case has been recorded as, although the incidence and correction of rectal prolapse is common in the pig, it appears to be relatively uncommon in the bovine in this country.

Subject

A yearling Aberdeen Angus bull.

History

The young bull had been mounting mature cattle for some days. A slight protrusion of the rectum was noticed at least two days before veterinary advice was sought, at which time prolapse had become markedly increased in size.

Examination and Symptoms

When first examined the animal was in good bodily condition and still very agile. Anorexia had been present for at least one day, and periodic spasms of tenesmus had been occurring frequently. Defaecation was absent at the time of examination. Pulse and temperature were both slightly elevated.

The extent of prolapsed rectum was approximately 18 inches in length from the anal sphincter to the extremity of eversion; the size and shape being comparable to that of a rugby football. It was grossly congested and oedematous, with extensive lacerations of the mucous membranes probably traumatic in origin.

Prognosis

Was given as hopeless unless surgical interference was embarked upon.

Restraint

Being of a fractious nature, the bull was restrained by two strong halters to a gate-post, and boxed between a gate and a wall in a standing position. Epidural anaesthesia was induced by 10 c.c. of 5 per cent. procaine hydrochloride local anaesthetic.

Surgical Technique

Cleansing of the site was carried out as far as was possible in the circumstances.

Correction by manual reduction was attempted, but proved unsuccessful due to the gross oedematous enlargement of the organ and the relatively narrow conformation of the male pelvis.

It was decided to perform a submucous resection. Traction was applied to the extremity of the prolapse by lay assistance in order to expose fresh rectum. With one hand as a flexible sound, 10 overlapping interrupted No. 4. 20-day catgut sutures were inserted through the double rectal wall without penetrating the mucous membrane applied to the sound.

The sutures were all tied off and the prolapsed portion of rectum excised.

Haemorrhage was slight, it being necessary only to ligate one submucous artery. The edges of the wound were smeared with penicillin veterinary cerate and the remaining exteriorised rectum was then replaced through the anus.

As slight tenesmus was now present, a purse-string suture of No. 4. 20-day catgut was inserted half an inch marginal to the external anal sphincter leaving a sufficiently large lumen for defaecation. Two million units of benethamine penicillin were injected intramuscularly.

One ounce of chloral hydrate solution in milk was administered *per os* as a sedative and the animal turned into a loose-box.

A laxative diet was prescribed, but as complete anorexia was present for three days following the operation, drenching with molasses and gruel was necessary. From the third day onwards a steady improvement in appetite was noticed.

Defaecation was performed naturally until the fifth post-operative day, when it was necessary to give one enema; thereafter normal defaecation was performed without aid.

Sequelae

A slight fluctuating oedema of the testes was present for several days but was soon resorbed. At the time of writing, six weeks after surgical interference, recovery appears to be complete.

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contaminated faeces. The authors are of the opinion that the latter is more likely because of the actual conditions under which these pigs were kept. The importance of the frequent removal of contaminated faeces cannot be overstressed in order that the drug may have its full effect in eradicating the disease. Where pigs were in less confined spaces such as straw-yards or runs adjacent to " arks " on pasture, it was found that relapses did not occur.

Summary

Of some 30 or 40 outbreaks of swine paratyphoid treated with nitrofurazone, with or without the use of sulphadimidine, 10 cases are recorded. The encouraging results obtained suggest that the use of nitrofurazone is a further advance in the treatment of swine paratyphoid.

Acknowledgments.—The authors are indebted to Mr. H. I. Field, M.SC., M.R.C.V.S., for helpful suggestions, to Mr. A. C. Owers, M.A., DIP. AGRI. (CANTAB.), and Mr. J. Proud, B.SC., N.D.A., for their help in recording the weights of pigs.

References

GUTHRIE, J. E. (1952). *Vet. Med.* **47**. 307.
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FOWL PEST

The fowl pest position in the remaining infected area around Preston has now been brought under control and Ministers have decided that the " stand-still " restrictions can now be removed. As from April 19th, the area became subject only to the general provisions of the Live Poultry (Restrictions) Order, 1954, as amended by the Live Poultry (Restrictions) (Amendment) Order, 1954.

A Case of Gravid Inguinal Metrocele in the Bitch and its Relief

BY

W. J. JONES-DAVIES
Llandilo, Carmarthenshire

Subject

An eight-year-old pedigree Golden Cocker Spaniel, weighing approximately 50 lb.; heavy in pup and also obese. The owner was worried by a relatively quickly enlarging swelling in the left groin.

History

The bitch had reared two litters successfully and no swelling had been noticed in the inguinal region in the past.

Examination

Examination was carried out on October 11th, 1955, and the swelling was found to contain a pup approximately 5 inches long, lying directly over the inguinal ring. No spontaneous movement was detected. The swelling gave no apparent discomfort to the animal which continued to carry out her normal functions. She was 55 days pregnant. The owner was advised on the condition and its correction, and the bitch was kept under close observation during the following week. On October 18th labour commenced. Vaginal examination revealed that no foetus was presented.

Treatment

Hysterotomy and repair of the inguinal ring.

It was decided that two incisions would have to be made; (1) over the inguinal ring, and (2) mid-line. The bitch was injected subcutaneously with 400 mg. thiambutene hydrochloride*. This was followed 20 minutes later with intravenous pentobarbitone sodium† (1 gr. per c.c.) of which 3 c.c. in all was required to produce a satisfactorily anaesthetised patient. The sites were prepared in the usual manner and draped with sterile cloths. An incision was made approximately 4 inches long over the long axis of the herniated foetus, being lateral to the most posterior mammary gland. The wall of the sac was very thin and the uterus was soon encountered. The uterus was packed off with sterile swabs and was incised over a foetal extremity. The foetus with its placenta was removed. The uterine incision was closed with a continuous lembert suture using 00 catgut.

The foetus having been relieved of its placenta, was injected with nalorphine hydrobromide‡ subcutaneously and this markedly assisted the return of normal respirations. With some difficulty the uterus was replaced into the abdominal cavity. The inguinal ring was now packed with gauze swabs and left until the other foetuses had been dealt with through a mid-line incision, the idea being to relieve the abdominal pressure for the easier repair of the inguinal ring later.

* Themalon.
† Nembutal.
‡ Lethidrone.

The mid-line incision was approximately 6½ inches long, directed through the linea alba. The left horn was sought for and drawn through the incision. It contained one foetus. The uterine incision was now re-opened by cutting the lembert suture and the pup milked down into the packed-off incision. It was removed together with the afterbirth. The other horn was eased through the mid-line and in turn three foetuses were delivered through the original incision. This was again closed with a continuous lembert using 00 catgut. All the pups were injected with nalorphine hydrobromide‡. One million units of penicillin powder (sodium salt) were sprinkled into the abdominal cavity and the linea alba sutured with a continuous suture using No. 1 catgut. The skin was closed with mattress sutures using No. 4 nylon. The inguinal ring was elliptical in shape, being 1¼ inches long, and for its repair it was decided to raise the hindquarters of the bitch. This prevented any tendency for viscera to protrude through the ring, and also the adipose round ligament which emerges through the ring tended to fall neatly into one corner. This technique afforded a very clear field for the repair. The hernial sac was trimmed down as far as possible and the ring closed with a continuous suture of No. 1 catgut, taking very deep bites on either side. The dead space was taken up with continuous sutures using 0 catgut. Finally the skin was closed with No. 4 nylon.

The bitch was given 1 c.c. of nalorphine hydrobromide subcutaneously and was almost normal in 30 minutes. The injection of 500,000 units of sodium penicillin was given daily for three days. Recovery of the bitch and litter was uneventful.

The sutures were removed after seven days, by which time the incisions had healed and the inguinal enlargement was reduced.

Discussion

According to Benesch & Wright (1950) the majority of these cases have to be relieved between the 25th and 35th days of gestation because of the severe tension in the sac. This particular case showed no discomfort to the animal and yielded a mature living foetus. This is a reflection on the size of the inguinal ring, which allowed sufficient blood supply to the developing embryo.

Acknowledgment.—I am indebted to Mr. C. F. Cartwright for his assistance during the operation.

Reference

BENESCH, F., & WRIGHT, J. G. (1950). "Veterinary Obstetrics," p. 340. Baillière, Tindall & Cox, London.

A HAT TRICK

His many friends will be interested to hear that Mr. J. V. S. Rutter of Herefordshire has just achieved a sporting hat trick. Having been captain of the county lawn tennis and hockey clubs, he has just been made captain of the Herefordshire golf club.

Current Literature

ABSTRACTS

White Scour in Calves. MURPHY, T. (1955). *Irish Vet. J.* **9.** 60-7.

Extensive field trials involving several hundred calves were carried out during 1953 and 1954 in County Limerick. They showed that ¼ lb. Aurofac A containing 450 mg. available aureomycin, given daily in the milk during the first eight days after birth, resulted in an incidence of 4.7 to 5.4 per cent. affected with white scour. Aurofac A ⅛ lb. given similarly gave an incidence of 8.98 to 9.05 per cent. affected. On 38 control farms during 1954 the incidence was 22.9 to 30.01 per cent. affected. In non-treated groups on farms selected for trials in 1953 and 1954, the incidence was between 23.1 and 32.3 per cent. affected. Improved husbandry methods alone on five selected farms reduced the incidence from 23.9 per cent. in 1953 to 8.7 per cent. in 1954. Feeding 8,000,000 to 12,000,000 units vitamin A plus 2,000,000 to 3,000,000 units vitamin D3 to the cows during the last few weeks of gestation resulted in very little difference between their calves (which showed 20.8 to 24.3 per cent. affected) and the controls. The incidence when 0.5 g. streptomycin sulphate was given for the first eight days in the milk was 15.0 to 17.2 per cent. affected, *i.e.* higher than with ¼ lb. or ⅛ lb. Aurofac A; but the death rate was lower (0.6 to 0.8 per cent.) compared with Aurofac A ¼ lb. (1.7 to 2.2 per cent.) and with Aurofac A ⅛ lb. (1.1 to 2.3 per cent.). C. M. E.

Food Poisoning in England and Wales, 1954. REPORT (P.H.L.S.) 1955. *Mon. Bull. Min. Hlth Lab. Serv.* **14.** (12). 203.

During 1954, 6,016 incidents of food poisoning were recorded. These involved a total of at least 11,800 persons, but only 34 cases were fatal. Half the incidents were due to *Salmonella typhi-murium* infection, and 9 per cent. to other *salmonella* organisms. Staphylococci and *Cl. welchii* were responsible for 2 and 1 per cent. of the incidents respectively, while the cause remained undiscovered in 39 per cent.

Duck eggs appeared to be responsible for 10 outbreaks of *S. typhi-murium* infection and for one outbreak of unknown cause. Eight outbreaks were associated with the use of milk or cream. Five of these were due to *Staph. aureus* infection and one to *S. typhi-murium*. In the two remaining outbreaks the cause remained undiscovered. Three outbreaks associated with cheese were due to contamination with *Staph. aureus*.

In one of the outbreaks attributed to milk, 16 persons became ill three hours after drinking T.T. unpasteurised milk. *Staph. aureus* of the same phage type was isolated from the faeces of patients, the noses of two cowmen, an unopened bottle of milk and the teat of a cow with mastitis. In a similar outbreak, three persons became ill three hours after drinking skimmed milk. *Staph. aureus* was isolated from their faeces, a cowman's nose, a sample of cream and a milk sample from a cow with mastitis. All these isolations were of the same phage type.

E. A. G.

The Effect of Vibriosis upon Subsequent Reproduction in Range Ewes. WIGGINS, E. L. (1955). *Amer. J. Vet. Res.* **16.** 214.

This report is based on the author's examination of the lambing records of the large flock of range ewes (composed of Columbia, Targhee and Rambouillet breeds) maintained at the U.S. Sheep Experiment Station in Idaho during the season 1952 and 1953. In 1952 the incidence of birth of immature lambs was high and in addition there were large numbers of "dry sheep." The trouble was shown to be due to *Vibrio foetus* infection.

No particular steps were taken to eliminate ewes that had aborted, had weak lambs, or were "dry" the following mating season. Similarly, no attempt was made to eliminate rams which had been used the year before. The results of the 1953 lambing were very good and compared favourably with the long-term (1939-1951) averages for the flock. It appears, therefore, that a bad outbreak of vibriosis had no effect the following year. J. S. P.

BOOK REVIEW

Manual of Milk Examination for Veterinarians and Veterinary Students. WOLFGANG SCHÖNHERR. 1956. Published by S. Hirzel & Co., Leipzig. Price: 19 marks.

This book is written for veterinary students and for veterinarians engaged in the dairy industry. The author is Senior Lecturer in the Institute for Veterinary Physiology in the Carl Marx University, Leipzig. It consists of 250 pages of text and 85 illustrations, some of them in colour. In a preface by Professor Ketz, it is mentioned that certain text-books which deal comprehensively with this subject among others can only be obtained by students and veterinary laboratory workers in East Germany with difficulty, or in limited numbers.

Details are given of a large number of tests which can be used to ascertain the freshness, cleanliness, safety and chemical composition of milk. Tuberculosis and brucellosis are given special attention because of their public health significance. There are many references in the text to work published in many countries, and there is also a list of books and monographs.

A section of some 60 pages at the end of the book deals with the law in East Germany as it relates to milk and milk products. It includes legislation introduced between 1930 and 1939, which covers much the same ground as the Food and Drugs Act, 1955, and the Milk and Dairy Regulations, 1949. Since the end of the war East Germany (German Democratic Republic—DDR) has also legislated to reduce the incidence of bovine tuberculosis and brucellosis in man by controlling these diseases in cattle, and by pasteurisation of milk from herds from which these diseases have not been eradicated. A voluntary scheme of tuberculosis eradication rather like the Attested Herds Scheme has also been introduced. A milk bonus is paid, but the farmer has to pay for the tuberculin tests. Vaccination for brucellosis can be used only with official permission, S 19 and "Langenhagen" strain vaccines being used.

News and Comment

THE P.D.S.A. PRIVATE BILL

The People's Dispensary for Sick Animals recently presented to Parliament a Private Bill, the majority of which related to internal affairs of the Society. Clause 6, however, read as follows:—

(1) Where any person being a person of not less than 30 years of age and domiciled or ordinarily resident in Great Britain is or has been prior to the passing of this Act engaged in whole time employment by the Society or by the former society either wholly outside Great Britain or partly inside and partly outside Great Britain and where such employment consists in the diagnosis of diseases in animals and the giving of medical or surgical treatment of animals then provided he has been so employed for a period of not less than 10 years and is of good personal character such person for the purpose of any enactment prescribing conditions for qualification for registration either in the Supplementary Veterinary Register under the Veterinary Surgeons Act, 1948, or in any other similar veterinary register shall be deemed to fulfil such conditions.

(2) Any limitation of time prescribed under any enactment for applying for registration in any such register as aforesaid shall be extended in respect of such persons until the expiration of one year from the commencement of this Act or from the completion of such period of 10 years employment as aforesaid whichever shall be the later.

The Council of the Royal College of Veterinary Surgeons, after giving this clause serious consideration, felt compelled to petition against it. The substance of the Petition read:—

The proposals contained in Clause 6 of the Bill would considerably extend the provisions of Section 6 of the Act of 1948 and so increase the number of unqualified persons who could practise veterinary surgery. In your Petitioners' submission such an extension is not necessary and would be contrary to public policy.

Parliament, by the Act of 1948, accepted the view of the Committee specially appointed to enquire into veterinary practice by unregistered persons that such practice should be brought to an end and in your Petitioners' submission Parliament rightly limited the persons (not registered in the Register of Veterinary Surgeons) who could continue to practise.

In this connection your Petitioners desire to refer to a Report of a Departmental Committee of the Ministry of Agriculture and Fisheries, set up in 1951 to examine and advise upon the problems raised by applications for licences under section 7 of the Act of 1948, with particular reference to intentions that had been expressed at that time for the immediate future.

The Committee reported in 1952 and the first subparagraph of paragraph 92 of their Report reads as follows:—

> 92. (1) So long as the licensing of employees of animal welfare societies under section 7 of the Veterinary Surgeons Act, 1948, continues, the animals of the poor will not receive the best diagnosis and treatment. It is in the public interest, and in the interests of the animal, that the objective of the Act—to bring to an end the practice of veterinary surgery by unregistered persons—should be achieved as soon as practicable.

Moreover, your Petitioners apprehend that if Clause 6 were allowed to pass into law the precedent created would be likely to be followed in subsequent Sessions by other societies or individuals with the result that the safeguards imposed by Parliament in passing the Act of 1948 would be considerably relaxed to the public detriment.

Your Petitioners respectfully submit that the powers of Clause 6 of the Bill should not be allowed to pass into law.

The hearing, before a Committee of the House of Commons composed of Mr. Robert Jenkins (in the Chair), Mr. Bishop, Mr. Dodds, and Mr. Sorensen, took place on the morning of Tuesday, 24th, and the whole day of Wednesday, April 25th. There appeared for the College Mr. Geoffrey Lawrence, Q.C. and Mr. Harold Marnham; and for the P.D.S.A., Mr. Gerald Thesiger, Q.C. and Mr. G. R. Rougier.

The principal part of the case for the Royal College depended on the fact that the Clause as drawn would re-open entry to the Supplementary Veterinary Register contrary to the expressed intention of Parliament.

However, during the course of the hearing it was stated for the P.D.S.A. that the clause objected to would be withdrawn, provided some agreement could be reached on a Clause which would enable the registration in the Supplementary Veterinary Register of four employees of the Society of mature years and of long service with the Society, who had been debarred from registration under the Veterinary Surgeons Act, 1948, because of the words " in the United Kingdom " in the Act, relating to the period of qualification. These four men had been employed by the Society in Paris, Tangier, Egypt, etc. For the Society it was urged that correspondence between the then Minister of Agriculture and Fisheries and Lord Amwell, for the Society, in the negotiations preceding the Act might be construed as stating that all employees of the Society, eligible in terms of service, would be registered wherever their work had been carried out.

The case for the College depended also on the proposition that a Public Act should not be amended by a Private Act, and that in any event to select individuals in a class because they were employees of a specific society was unfair to other persons who might come within the same category, but were not

within the terms of the Bill because they were not employed by the P.D.S.A.

The decision of the Committee was that Clause 6 in the form as presented to Parliament, should not proceed, but that the Clause should be re-drafted so as to prevent the fears expressed by the Royal College as to the general future registration of employees of the Society, but to provide for the registration of the four individuals concerned.

The Committee went through the remainder of the Bill, made several amendments, and the Chairman was directed to report the Bill as amended to the House.

THE ROYAL SOCIETY OF HEALTH CONGRESS

An audience of over 100 members of the veterinary and allied public health professions attended the Veterinary Hygiene Section of the Health Congress which opened in Blackpool on April 24th. The section met under the Presidency of Mr. R. E. Glover, Principal of the Royal Veterinary College, London.

There were two papers for discussion: the first, "New Horizons in Animal-Human Health Relationships," by James Lieberman, D.V.M., M.P.H., and Raymond J. Helvig, B.A., D.V.M., M.P.H.; the second, "Animal Housing in Relation to Public Health," by J. O. L. King, M.V.SC., B.SC., M.R.C.V.S., This was the first occasion for many years on which veterinarians from overseas had been invited to play a leading part in the proceedings of the Veterinary Hygiene Section, and it is to be hoped that the unfortunate circumstances which prevented lively discussion of the paper by the American authors will not deter the organisers of this Section from extending similar invitations in the future. Indeed, the scope of the subjects that both they and Mr. King had to offer was responsible for a wider veterinary interest in the meeting than has frequently been the case in the past. The organisers are to be congratulated on their enterprise.

In his Presidential Address, Mr. Glover referred briefly to the development of the Royal Society of Health and to the unique part its examination system and educational work had played in advancing knowledge on public health matters. The main theme of his remarks was the "tripos of responsibility" between medical officers of health, sanitary inspectors and veterinarians on matters of food hygiene and the control of zoonoses, and he dealt briefly with the proper functions of each of these groups. He made it clear that veterinary interest in public health—and that of the Veterinary Hygiene Section in particular—could no longer be restricted to "meat" and "milk"—and that it was necessary not only to display an awareness of the many epidemiological problems in the zoonoses which remained to be solved, but to adopt a wider approach in our attempts to solve them. He made a plea for an extension of existing laboratory facilities, especially in the general field of food control, and drew attention to the need for better training facilities for public health veterinarians at post-graduate level. The President emphasised that progress in public health could only be achieved by co-operation between all interested professions, and that in this connection the example shown by other countries formed a challenge to our own.

Mr. E. R. Callender, junior vice-President of the B.V.A., proposed the vote of thanks to the President.

It was unfortunate that the first paper, "New Horizons in Animal Health Relationships," by James Lieberman and Raymond J. Helvig, had only been made available to delegates on the day of the Sectional meeting, and that due to unforeseen circumstances, neither of the authors was able to be present. The President announced that at very short notice Lt.-Col. N. A. Lasher, U.S.A.F. (V.C.) had agreed to introduce the paper. As neither Col. Lasher, nor the majority of delegates, had had the opportunity of studying the paper beforehand, discussion was inevitably restricted.

The paper was a synopsis of the attitude of American public health veterinarians to the part they play—or are capable of playing—in public health affairs. It dealt briefly with food hygiene, control of zoonoses, production of biologicals, experimental medicine and surgery, and with training in veterinary public health. Many delegates later expressed their appreciation of the paper and regretted the circumstances which prevented them discussing the interesting points it raised. It is to be hoped that, in due course, this paper will receive the wider attention—especially from veterinary undergraduates—that it deserves.

Both Col. Lasher and Mr. C. V. Dayus, who opened the discussion, received the special thanks of the meeting for the way in which they responded to the emergency.

The second paper, "Animal Housing in Relation to Public Health," by J. O. L. King, discussed in general terms the measures to be adopted in preventing the introduction of disease to farms and in limiting the spread of disease on infected premises. It dealt with the layout of buildings, ventilation, sanitation, water supplies, and rodent and fly control.

In his remarks to the meeting Mr. King emphasised that more attention would have to be paid to research on animal housing in the future, but that careful attention to hygiene by farm staff was as important a factor in disease control as the provision of modern buildings.

The discussion on this paper was opened by Dr. D. W. B. Sainsbury of the Royal Veterinary College, and both he and other participants in the discussion raised several interesting points.

A vote of thanks to all the principal speakers was proposed by the Recording Secretary, Professor H. Burrow, at the conclusion of the meeting.

CLINICAL INFORMATION

Honorary secretaries of Divisions will, by now, have been informed of a new endeavour on the part of the Editorial Committee to add to the clinical content of THE RECORD. The suggestion is that copies of two questionnaires, one surgical and the other medical,

will be distributed to members of Divisions with the request that they be good enough to fill in the appropriate questions when they come across a case likely to be of interest to their colleagues. It is hoped, by this means, to save busy practitioners the labour of writing full-length clinical papers. Such papers, based upon the information given in the questionnaires, will be written in the editorial office and submitted in a finalised form, before publication, to the veterinary surgeons who filled in the forms.

We hope this idea will appeal to readers in private practice for whose interest the clinical papers will mainly be intended.

HOLIDAY EXCHANGES

A number of readers have been good enough to make enquiries about the suggested holiday exchanges between the children of European and of British veterinary surgeons; but there are many children for whom arrangements have still to be made. In most cases return hospitality is suggested, so that readers' children have an opportunity of travelling abroad under both pleasant and inexpensive circumstances. We publish a further list of offers below, and the General Secretary of the B.V.A. would welcome enquiries.

France

Exchange: Boys aged 14 to 17 years living in:— Beaune (Côte d'Or), Angoulême (Charente), Montaign (Vendée), Champdeniers (Deux-Sevres), Cognac (Charente), Avranches (Manche), Neuvy-le-Roi (Indre-et-Loire).

Girls aged 13 to 18 living in:— Rheims (Marne,) Locmine (Morbihan), Metz (Moselle).

Au pair: Boy, 17 years, who wishes to stay in Britain for 10 months but would invite an English boy in exchange if desired. He could help in practice, drives car, etc.

Girl, 17 years, who would be willing to help with children and in the house.

Paying Guest: Boy, 14 years. He would like to be with a boy of his own age.

Girl, 16 years; girl, 18 years.

Germany

Exchange: Boy, 18 years, from Bochum, near Essen.

Italy

Exchange: Boy, 14 years, from Florence.

EXCHANGE OF CORRESPONDENCE

We have the names of two French children who would like English correspondents. They are both girls of about 15, one living in Constantine, Algeria, and the other in Bar-le-Duc (Meuse), France. Please write to the General Secretary if your son or daughter would like to start a correspondence.

NATIONALISM AND LOCUSTS

It is reported from the headquarters in Rome of FAO that after long and bitter agitation, Saudi Arabia, supported by the rest of the Arab League, has brought about the liquidation of the British desert locust control organisation in Jeddah. This piece of folly will drive from the country a mission vital to the food production of the entire Middle East, the Near East, and great areas of Africa.

The places of a highly skilled body of technical experts will be taken by Arabs; and a United Nations spokesman has said that two years of inexpert locust control could undo the work of years and lead to famine.

VETERINARIAN'S SUCCESSFUL APPEAL

A successful appeal made recently to the Ministry of Housing and local Government by Mr. T. F. Tunney of Peterborough, will be of interest to small-animal practitioners generally. Mr. Tunney, for the purposes of his practice, had established kennels and a caravan on a piece of land (his own property) in Old Fletton. The county planning authority had made an objection on the grounds of the disturbance of amenities, but on Mr. Tunney's appeal the Ministry had overruled the objection.

In view of the concessions made in a number of parts of the country to mobile dispensaries run by animal welfare societies—some of the dispensaries even "squatting" regularly within proximity of veterinary surgeons' permanent premises—the action of the county authority was unreasonable, to say the least. The veterinary surgeon has helped to establish a principle and is to be congratulated upon his success.

A CORRESPONDENCE ON ANIMAL EXPERIMENTS

Members of the profession may have been reading the correspondence, initiated by Major Hume of UFAW, which has appeared in recent weeks in *The Observer*, on the subject of experiments on animals. The great increase, within recent years, in the number of laboratory experiments involving animals was, in any case, likely to bring this much debated subject to public notice again. There is general desire—at least as much among research workers as anyone else if the zealots would but believe it—to ensure that laboratory animals should be humanely treated, and spared all unnecessary pain; but this is a subject upon which such deeply felt—if often misguided—emotions are expressed that its objective consideration is usually submerged in a welter of prejudice. As *The Observer* itself says: "Some anti-vivisectionist propaganda gives a very distorted impression of what goes on in the laboratories." That is to put it mildly. The simple fact which is surely beyond dispute is that research could not go on at all without experiment, and a considerable part of such experiment causes the laboratory animals no suffering at all.

Humane considerations sometimes play less part in research work carried out abroad than is the case here, and this red herring is all too often introduced by those whose feelings outrun their judgment.

Scientists are aware, at least in our own laboratories, of the moral responsibility they bear for animals upon which their researches oblige them to work, and in any case licences to experiment upon living subjects are only granted with discretion and are subject to considerable safeguards.

The Observer has performed a useful service in opening its columns to the discussion of the subject, and research workers will not be least among those who approve its initiative.

ADVISER ON POULTRY RESEARCH TO THE A.R.C.

Dr. R. F. Gordon, Director of the Houghton Poultry Research Station, has, with the consent of the Governing Body of the Station, accepted an invitation from the Agricultural Research Council to be their Adviser on Poultry Research. His functions as Adviser will be part-time and will not interfere with his primary duties as Director of the Station. Dr. Gordon will be responsible for keeping under review research in progress on poultry, and will act as Technical Secretary to the Council's Committee on Poultry Research, which exists to co-ordinate existing research and to propose such additional work as is thought desirable.

IN PARLIAMENT

Meat Inspection

(Veterinary Supervision)

MR. H. HYND (April 26th) asked the Minister of Agriculture, Fisheries and Food whether, in drawing up the detailed arrangements for Government contributions towards the cost of inspecting meat at slaughterhouses, he will satisfy himself that, in each case, there is adequate veterinary supervision of such meat inspection on the lines recently recommended by a departmental committee.

MR. H. NICHOLLS: The arrangements will certainly have regard to the adequacy of meat inspection by local authorities seeking a Government contribution; but my right hon. friend has no power to insist on supervision by veterinary officers.

Veterinary Surgeons (Licences)

MR. A. J. IRVINE (April 30th) asked the Minister of Agriculture, Fisheries and Food whether he is satisfied that, in arriving at decisions to issue licences under Section 7 of the Veterinary Surgeons Act, 1948, sufficient regard is had for the existing veterinary services available in the areas concerned; and if he will make a statement.

MR. AMORY: No such licences have been granted since 1952. Any new application will be considered in the light of the recommendations of the Committee set up under the chairmanship of the hon. Member for Derbyshire, South-East (Mr. Champion), which reported in that year.

MR. IRVINE: Will the right hon. Gentleman agree it is in principle undesirable that where a veterinary surgeon is practising in a locality and giving his services free to poorer people he should suddenly be faced with competition from another clinic in the near neighbourhood? Does not that involve waste of resources as well as some injustice to the veterinary surgeon concerned?

MR. AMORY: I think that it would be right to say that any licence granted under that Section of the Act should be granted only in the most exceptional circumstances.

Anthrax

MR. CHAMPION (April 30th) asked the Minister of Agriculture, Fisheries and Food if he has investigated the cause of the sharp rise in the number of outbreaks of anthrax during the recent winter months; and if he will make a statement.

MR. AMORY: Very detailed investigations have been made. Although the specific cause of the unusually high number of cases of anthrax has not been positively established, there is little doubt that it was directly associated with imported feeding stuffs. I am glad to say that there has been a marked decrease in the number of cases confirmed over the last fortnight, and I am hopeful that the disease will soon reach its normal low incidence.

MR. CHAMPION: I understand that these feeding stuffs were imported under a Board of Trade licence. Is any endeavour made to ensure the reasonable quality of things imported in that way?

MR. AMORY: I should not like to convey the impression that we have got to the bottom of this trouble, but we believe that it is due to imported feeding stuffs, and every attempt is made to reduce the risks there as far as possible. These may apply, however, not only to feeding stuffs of animal origin, such as bone meal, but also to feeding stuffs of vegetable origin, and of course we cannot preclude imported feeding stuffs altogether.

SHEEP DISEASES

A public meeting on the subject of diseases of hill and lowland sheep—their control and prevention—will be held in the Witham Hall, Barnard Castle, County Durham, on May 18th, at 2 p.m.

The programme includes two brief talks, " Sheep Diseases in the North East of England," by Mr. K. G. Towers, and " Recent Research on Sheep Diseases," by Dr. Stamp, Director of the Moredun Institute, Edinburgh.

Films on sheep diseases will be shown during the tea interval. A discussion will follow and this will take the form of a Brains Trust. The members of the panel include Dr. Stamp, Mr. Towers, Professor Cooper (Dean of Agriculture, Newcastle) and three well-known farmers, including Mr. L. Y. Dent of Shotley Bridge (Chairman).

It is hoped that the meeting will be well supported by veterinary surgeons and farmers in the North of England, and any communications about it should be sent to Mr. T. Johnston, D.V.O., North Riding.

PIG DISEASE IN THE ISLE OF MAN

A report is current that when a check was made recently on all pigs passing through two abattoirs in the Isle of Man a condition " indistinguishable from atrophic rhinitis " was found in a number. The

condition was not confined to any one breed of pigs. The inference has been drawn that the condition discovered is atrophic rhinitis as dealt with under the Atrophic Rhinitis Order in this country. For the present, at least, this view is debatable for although the affected pigs showed lesions of the turbinate bones at *post-mortem* examination, it is understood that there was no evidence of a spreading clinical disease in the herds from which they originated.

THE REGISTER OF VETERINARY SURGEONS

The name of Mr. William Jones, Milburn, Box 18, Highlands Rail, South Africa, has been restored to the Register of Veterinary Surgeons.

The name of Mr. J. P. A. Potts, of Old Manor Farm, Cublington, near Leighton Buzzard, was restored to the Register on April 26th.

The name of Mr. J. H. Squire, of 37, Broomfield Road, London, W.13, has been removed from the Supplementary Veterinary Register at his own request.

The name of Mr. S. H. Thompson, of 58, Wellington Road, Stockport, has been removed from the Supplementary Veterinary Register.

UNIVERSITY NEWS

London

B.Sc. (Veterinary Science), March, 1956

Alexander, Thomas John Lyndon; Hudson, John Robert; White, Frederick.

Part I only

Pocock, Eric William.

Part II only

Fenton, Brian Keith.

Pre-Clinical Examination: Part II, March, 1956

Baber, John Brian; Ball, David Clifford; Beach, Leonard Simmonds; Bradley, Raymond; Bunner, John Kelvin; Creek, Michael John; Daniels, Michael George; Eaton, Timothy Morley; Farrow, Anthony Bernard; Fox, Gerald William; Jones, Brian; Kamara, John Abu; Lacey, David George; Lang, David Christopher; Mallows, Bruce Alexander; Marriott, David William; Morley, Arthur Frederick; Oliver, John Julian; O'Shea, Jeremy David; Oxenham, Michael; Parkes, David Anthony; Prosser, Graham George; Roberts, Edward Elfyn; Robinson, John Clowes; Sayle, Bryan; Seed, James Henry; Sinclair, Ian Willard; Smith, George Alfred; Thrift, Ronald James; Toes, Michael Matthew; Vos, Paul; Wilkinson, Edwin, and Wright, Jeremy Neil.

FELLOWSHIP DIPLOMA AWARDED

The Council of the Royal College has recently awarded to Dr. A. M. Harthoorn the diploma of Fellowship for a thesis entitled, "A Therapy for Anaesthetic Overdosage in the Dog."

Dr. Harthoorn was awarded the M.R.C.V.S. diploma in June, 1950, and has since been awarded the D.V.Sc. degree at the University at Utrecht. He is now lecturer in veterinary physiology at the University College of East Africa.

THE ASSOCIATION OF BRITISH PHARMACEUTICAL INDUSTRY

The annual dinner of this organisation was held at the Savoy Hotel on April 25th. There was a record attendance of 437 representatives of member firms and guests. Mr. C. M. Hill, President of the Association, proposed "Our Guests," and the response was made by Mr. Robert Turton, Minister of Health. Among the company who sat down to dinner were:—

Mr. E. Wilkinson, President of the B.V.A.; Mr. H. Sumner, President of the Royal College; Mr. J. N. Ritchie, Chief Veterinary Officer; Mr. W. G. R. Oates, Registrar and Secretary of the Royal College; Mr. F. Knight, General Secretary of the B.V.A.; Mr. R. S. Marshall, adviser on animal health to the Colonial Office; Dr. A Macrae, secretary of the B.M.A.; Sir Weldon Dalrymple Champneys, deputy chief medical officer to the Ministry of Health, and Sir William Gilliatt, President of the Royal Society of Medicine.

In the course of his speech proposing The Guests, Mr. Hill said:—

"Our President last year, Mr. Boucher, referred in his speech at the Annual Dinner to the formation of a committee composed of those companies concerned in the manufacture of drugs for the veterinary surgeon, and I am glad to be able to say that the committee made so much progress that they quickly showed the need for a properly constituted Division, which has now been incorporated in our permanent organisation. No less than 27 firms are already included in the new veterinary Division, which is some indication of the interest which is being taken in animal medicine. We have with us to-night the Presdent of the Royal College of Veterinary Surgeons, Major Sumner, and the President of the British Veterinary Association, Mr. Wilkinson. We are delighted to see them here and I would assure them of our hope that there will be opportunities in future for our organisations to work with each other."

A MATTER OF DEFINITION

In the High Court last week a learned judge held that fish cut up in pieces and preserved in brine is no longer fish, in the legal sense, but "a fish product." Veterinary surgeons are not, in the main, concerned with fish; but what of meat? Is a cutlet in aspic meat or "a meat product?" And if it is the latter, what is a sausage? A joint of veal requires no definition in this sense, but what change does it undergo, legally speaking, when it is sliced up, soaked in marsala, subjected to the refinements of culinary art and finally served as grenadine?

The language of the law is not to be comprehended by vulgar minds. It has been stated by no less an authority than Miss Dorothy Sayers that to call a lawyer a daffy-down-dilly is a criminal libel; and it has been held that a bookmaker doing business under an umbrella is not in "a place." Only last year birds were found not to be "animals," and of course every coastguard knows that once a whale comes ashore it ceases to be a mammal and becomes "a wreck."

RACE MEETINGS WITH THE RUSSIANS?

One outcome of the journey to England of Dr. N. Strogov, the Soviet veterinary surgeon who brought over the two horses presented to the Duke of Edinburgh and to Prince Charles, may be some Anglo-Russian horse racing. Dr. Strogov, who has been for many years veterinary surgeon to the Moscow Hippodrome racecourse, has invited—according to press reports—several representatives of British racing to visit Russia and see how meetings are arranged. Major J. D. Wallis, Clerk of the Course at Epsom, has expressed general interest in the project, and is reported to have envisaged the possibility of Russian horses competing in due course in this country.

PERSONAL

Birth

VENN.—On April 15th, 1956, to Betty, wife of J. A. J. Venn, M.R.C.V.S., Burrington, Nr. Bristol, a daughter, Joanna Mary.

Marriage

WRIGHT—HAWES.—On Saturday, April 28th, 1956, Michael Alan Wright, M.R.C.V.S., eldest son of Mr. A. J. Wright, J.P., M.R.C.V.S., and Councillor Mrs. Wright of Macclesfield, to Wendy E. Hawes, physiotherapist, only daughter of Mr. and Mrs. W. Hartley Hawes of Queensberry, Fordham, Nr. Newmarket. The wedding took place at Wicken Church and the reception was held at Bedford Lodge, Newmarket.

OBITUARY

MR. AND MRS. PHILIP EMSON

Mr. Kenneth M. Jobson writes:—

The sudden tragic deaths of Mr. P. E. Emson and his wife in a road accident came as a great shock to their many friends and clients. Mr. Emson had been in practice in Bourne for 30 years, and was held in high regard both as a man and as a veterinary surgeon. He was a skilled practitioner with both small and large animals, and a lover of good horses.

His wife was of great assistance to him in the practice, taking a close interest in the small-animal side.

I feel it has been a great privilege to have known them both for a decade, and had the benefit of their knowledge and understanding. They will be sadly missed in Bourne and district, and the deepest sympathy is extended to the relatives on both sides.

COMING EVENTS

May

5th (Sat.). Annual General Meeting of the Association of State Veterinary Officers in the auditorium of the Wellcome Research Institution, 183-193, Euston Road, N.W.1, 4 p.m.

9th (Wed.). Meeting of the R.A.V.C. Division of the B.V.A. at the Agricultural Research Council Field Station, Compton, Nr. Newbury, Berks, 11 a.m.

Annual General Meeting of the Sussex Division, B.V.A., at the Old Ship Hotel, Brighton, 2.30 p.m.

16th (Wed.). Annual General Meeting of the Scottish Regional Group of the A.V.T. and R.W's. in the University of Glasgow Veterinary Hospital, Bearsden Road, Bearsden, 2.15 p.m.

17th (Thurs.). Annual General Meeting of the Society of Practising Veterinary Surgeons at the Royal Veterinary College, Camden Town, 2.30 p.m.

Ordinary General Meeting of the South Eastern Division, B.V.A., at the Royal Star Hotel, Maidstone, 6.30 p.m.

25th (Fri.). Ordinary General Meeting of the Royal Counties Division, B.V.A., at the Bull's Head Hotel, Aylesbury, 2.30 p.m.

June

6th (Wed.). 113th Annual General Meeting of the Royal College of Veterinary Surgeons at 10, Red Lion Square, London, W.C.1, 12 noon.

Annual General Meeting of the Victoria Veterinary Benevolent Fund at 10, Red Lion Square, immediately following the Annual General Meeting listed above.

7th (Thurs.). Annual Meeting of the R.A.V.C. Golfing Society at the North Hants Golf Club, Fleet, 10 a.m.

8th (Fri.). Annual Dinner of the Royal Army Veterinary Corps Officers Club at Grosvenor House, Park Lane, London, W.1.

September

16th to 22nd (Sun. to Sat.). 74th B.V.A. Annual Congress at Royal Leamington Spa.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Ayr. Rushaw Farm, Kilmarnock (Apr. 25).

Beds. Griffin Farm, Toddington, Dunstable (Apr. 24).

Berwick. Jodling Farm, Greenlaw (Apr. 24).

Denbigh. New Hall, Chirk, Wrexham (Apr. 26).

Derby. Frith Hall Farm, Chander Hill, Chesterfield (Apr. 26); Birley Cottage, Pratt Hall, Cutthorpek, Chesterfield (Apr. 27).

Dumfries. Tererran, Moniaive (Apr. 28).

Durham. School Close, Westgate, Bishop Auckland (Apr. 30).

Leics. Othorpe House, Slawston, Market Harborough (Apr. 30).

Northants. Hill Farm, Mears Ashby (Apr. 30).

Notts. Dalite Poultry Farm, Walesby, Newark (Apr. 26).

Staffs. Little Hollinghurst Farm, Park Lane, Endon, Stoke-on-Trent (Apr. 28).

Sussex. Bungalow Farm, Keymer, Hassocks (Apr. 30).

Warwicks. Brockhurst Farm, Monks Kirby, Rugby (Apr. 30).

Yorks. Hall Farm, Shipton by Beningbrough; Chapel Farm, Swinton, Malton; Clay Hall Farm, Cawthorne, Barnsley (Apr. 24); Middle Farm, Sunk Island, Hull (Apr. 25); Moor House Farm, Hovingham (Apr. 30).

Fowl Pest

Essex. Rayleigh Down, Arterial Road, Thundersley, Dunroaming, Horndon View Estate, Horndon-on-the-Hill, Stanford-le-Hope; Russell House, Canvey Island (Apr. 26); Maples Farm, Dunton Wayletts, Brentwood; Butlers Farm, Willingale Spain, Ongar; Theo Hall, Canvey Road, Canvey Island; Billericay Poultry Farm, London Road, Billericay (Apr. 28); Little Russell Head Farm, Canvey Island (Apr. 29); Galloway, Hude Wood Lane, Rochford (Apr. 30).

Herts. Mercy Rise, Rucklers Lane, Kings Langley (Apr. 26); Rectory Farm, Kings Langley (Apr. 30).

Lincs. Waterford Lane, Cherry Willingham; 2, Ebenezer Bungalow, Waterford Lane, Cherry Willingham (Apr. 24); 90, Sewell Road; Premises at Swan Street; 2/32, Mainwaring Allotments, Lincoln (Apr. 26); Outer Circle Road, Lincoln (Apr. 30).

Swine Fever

Bucks. Manor Farm, Stanwell Road, Horton, Slough (Apr. 26); 324, Horton Road, Datchet; Anthony House Farm, Colnbrook, Slough (May 1).

Ches. Fields Farm, Green Lane, Chorley, Alderley Edge, Manchester (Apr. 26); 45, Warmingham Road, Crewe (Apr. 30).

Derby. Hill Farm, Newton Solney, Burton-on-Trent (Apr. 26).

Essex. Lofts Hall, Elmdon, Saffron Walden (Apr. 30); Piggeries, Clockhouse Lane, Collier Row, Romford (May 1).

Hants. Valley Road Piggeries, Strouden, Bournemouth (Apr. 26); "Dawn," Ibsley Drove, Ibsley, Ringwood (Apr. 30).

Lincs. 31, West Street, Winterton, Scunthorpe; Whaplate Farm, Messingham, Scunthorpe (Apr. 27).

Middx. Enterprise Piggeries, Packet Boat Lane, Cowley, Uxbridge (Apr. 28).

Northants. 18, Benefield Road, Oundle, Peterborough (Apr. 30).

Somerset. New Farm, Bowdens, Langport (Apr. 28).

Staffs. Bate Farm, Dilhorne, Stoke-on-Trent (Apr. 26); Croft Farm, Brewood Road, Coven, Wolverhampton (Apr. 27); Gibraltar Farm, Cheadle, Stoke-on-Trent; Smallholding rear of Stafford Cemetary, Stafford (Apr. 30); Boots Land, Bridgnorth Road, Compton, Wolverhampton (May 1).

Wilts. Stock Lane Farm, Landford, Salisbury (Apr. 30).

Yorks. Hollins Farm, Slaithwaite, Huddersfield (Apr. 25); Blake Hill End Farm, Northowram, Halifax (May 1).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Tetrachlorethylene as an Anthelmintic for Sheep

Sir,—In his article in your issue of December 24th, 1955, Mr. Gibson showed from the results of a small but well controlled trial that tetrachlorethylene administered to sheep in capsules was not effective against *Trichostrongylus axei.*

It seems from the latter part of his article, that his purpose was to show that tetrachlorethylene, as commonly used in Britain, *i.e.* administered in capsules and without prior stimulation of the oesophageal-groove reflex, was ineffective against *T. axei.*

In this, and in pointing out that a decline in faecal egg numbers immediately after treatment may not indicate any reduction in the actual worm burden, he has performed a useful service. It appears to me, however, that without some further amplification the impression left with a reader may be over derogatory to tetrachlorethylene as an anthelmintic for the sheep.

Mr. Gibson's paper appears to be the first record of an experiment to test the efficiency of this anthelmintic against *T. axei.* It will be interesting to ascertain by further trials whether the drug is effective when injected or drenched into the abomasum. Mr. Gibson draws attention to the use of copper sulphate solution to bring about reflex closure of the oesophageal groove, and cites some references to investigations by other authors who have advocated this method of ensuring that the drug reached the abomasum. However, he does not make it clear that when capsules are administered to sheep, they almost invariably are swallowed into the rumen unless prior stimulation of the oesophageal-groove reflex is carried out. It has been found in studies at the McMaster Laboratory that tetrachlorethylene is effective against *Haemonchus contortus* and *T. colubriformis* only when swallowed or injected into the abomasum.

This was indicated in the trials reported by Clunies Ross & Gordon (1935), noted by Mr. Gibson, and also in further trials with *H. contortus* recorded by Gordon (1935). In these trials, the drug was administered as a drench without stimulation of the oesophageal-groove reflex by copper sulphate solution and was either highly effective or quite ineffective. The hypothesis then advanced that the drug was effective only when it reached the abomasum direct has been confirmed by deliberately injecting it into either rumen or abomasum.

Administration of tetrachlorethylene in capsules, as carried out by Mr. Gibson, would almost certainly result in the drug passing into the rumen, and thus one would not expect it to exert anthelmintic effects. Swales *et al.* (1942) found that tetrachlorethylene administered in capsules after spraying the pharynx with copper sulphate solution showed some anthelmintic action against *T. axei,* and more marked action against the intestinal species of the genus.

A number of anthelmintics are effective in sheep only when swallowed into the abomasum—among them are tetrachlorethylene, nicotine, copper sulphate,

soluble arsenicals, chlorinated benzenes and carbon bisulphide (Gordon, 1952, 1953).

In Australia, a number of trials have been carried out and it was found that tetrachlorethylene is reasonably effective against *Trichostrongylus* spp. (chiefly *T. colubriformis*) when administered after a dose of copper sulphate solution to stimulate reflex closure of the oesophageal groove (Gordon & Clunies Ross, 1936; Gordon & Whitten, 1940; Gordon, 1940, 1950). When the effects have been measured by means of egg counts, it is the usual practice to continue the observations for two or three weeks after treatment in order to avoid being misled by a temporary decline in egg production.

In the trials against *H. contortus* (Clunies Ross & Gordon, 1935; Gordon, 1935) egg counts were carried out, but the results were not given in the relevant papers because the sheep were slaughtered for worm counts only seven days after treatment. During this time, the egg counts declined in accordance with the reduction in worm burdens indicated by comparison with control sheep, and there was no decline in egg counts in sheep in which the drug was ineffective.

The dose of tetrachlorethylene generally recommended for sheep in Australia is 7.5 ml. for adult sheep, reduced proportionally down to 2 ml. for lambs under four months old, and it is administered either mixed with equal parts of liquid paraffin or in an emulsion according to the recommendations of Swales *et al.* (1942) and Mönnig & Ortlepp (1939). The dose must be preceded by swabbing the mouth with 10 per cent. copper sulphate solution, or the administration of 10 to 20 ml. of a 5 per cent. solution.

Yours faithfully,

HUGH McL. GORDON.

McMaster Animal Health Laboratory,
Parramatta Road,
Glebe, N.S.W.,
Australia.

April 30th, 1956.

References

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SWALES, W. E., SYLVESTER, P. E., & WILLIAMS, S. B. (1942) *Can. J. Res. D.* **20.** 115-132.

Memo. to P.R.O.

Sir,—The attached quotation is taken from the current issue of a popular magazine. It might well be brought to the notice of our Public Relations Officer. It reads: "Doing business without advertising is like winking at a girl in the dark. You know what you're doing, but no else does."

A. NOEL ORMROD.

Arrowe Park Road,
Woodchurch,
Wirral.

April 25th, 1956.

ADVERTISER'S ANNOUNCEMENT

The Crookes Laboratories Limited have advised us that the preparation formerly marketed under the name Collotone (Veterinary) is now being issued under the registered trade mark "Collovet." This is a change of name only, and no alteration has been made in the composition of the preparation, or in the range of packings and retail prices.

The change has been made to avoid a possible confusion in dispensing when the veterinary preparation is called for, as its human counterpart contains a much higher content of strychnine and would tend to give rise to toxic reactions, particularly in small-animal practice.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period		Anthrax	Atrophic Rhinitis	Foot-and-Mouth	Fowl Pest	Sheep Scab	Swine Fever
1st to 15th April, 1956		70	—	—	22	—	30
Corresponding period in	1955	44	—	—	28	—	98
	1954	17	—	—	34	—	61
	1953	32	—	2	9	—	217
1st January to 15th April, 1956		892	3	8	193	—	183
Corresponding period in	1955	311	—	6	194	—	410
	1954	88	—	11	445	—	396
	1953	326	—	24	192	—	780

TUBERCULOSIS (ATTESTED HERDS) SCHEMES

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at 31st March, 1956, was as follows :—

ENGLAND	WALES	SCOTLAND	TOTAL (GREAT BRITAIN)
84,679	34,542	36,896	156,117

TUBERCULOSIS ORDER OF 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period 1st January to 31st March, 1956, was 323.